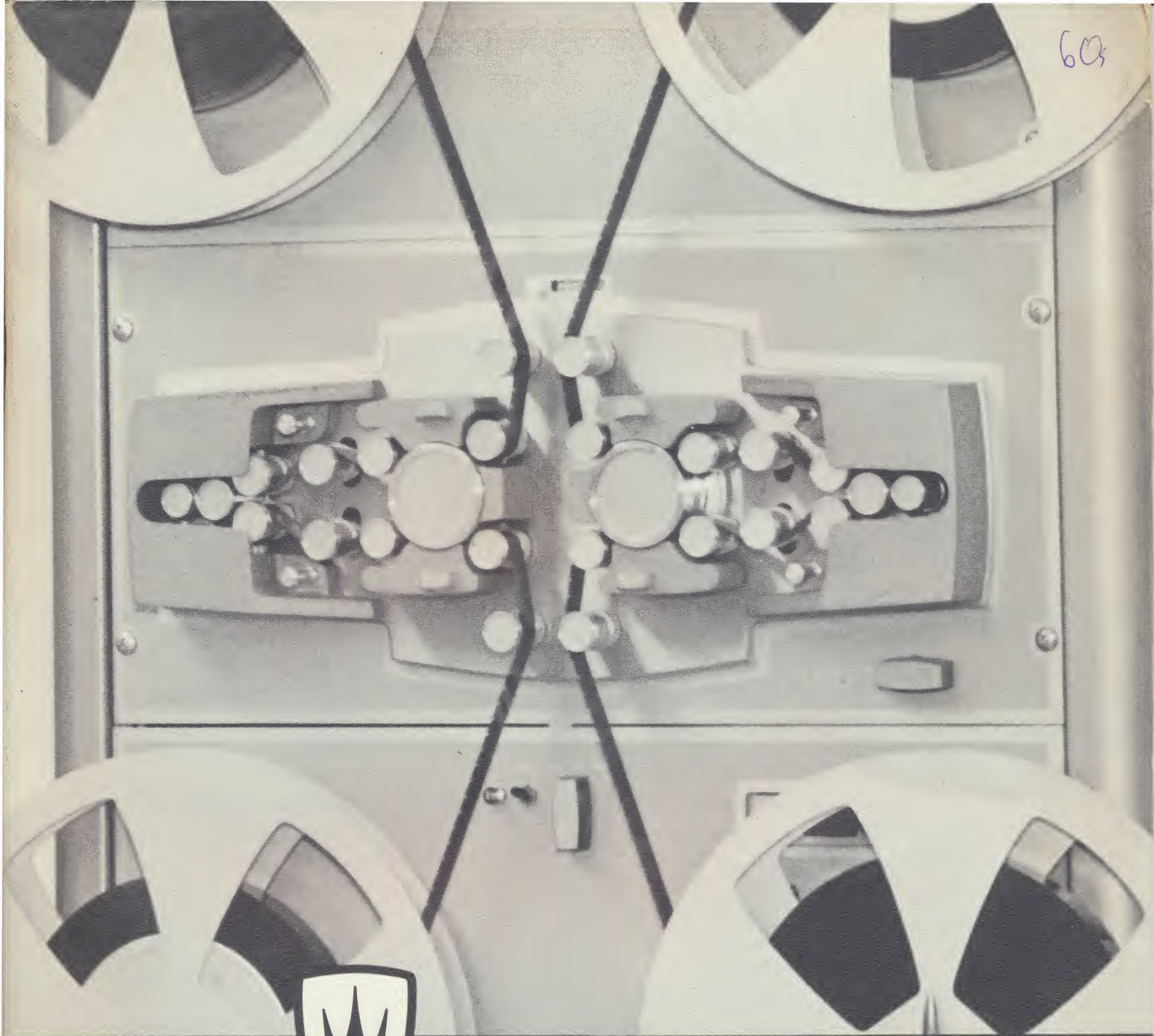




AMEGA

synchronous magnetic film

sound recording system

RECORDER CATALOG



AMEGA corporation

Proudly presents its

MODERN line of motion

picture sound recorders

THE AFFILIATION WITH **OMEGA ENGINEERING COMPANY** HAS GIVEN EVERY ITEM IN THE LINE OUTSTANDING DESIGN AND ENGINEERING CONCEPT. FOR 18 YEARS **OMEGA** HAS SERVED INDUSTRY WITH EQUIPMENT AND COMPONENTS, BOTH ELECTRONIC AND MECHANICAL. IT HAS KEPT PACE WITH "SPACE AGE" TECHNOLOGY UTILIZING LATEST TECHNIQUES AND MATERIALS.

FMEGF RECORDERS AND DUBBERS HAVE BEEN "TOOLED" FOR MANUFACTURE RESULTING IN BETTER PERFORMANCE, LOWER MAINTENANCE, INTERCHANGEABLE PARTS, AND BETTER VALUE. THE MODULAR CONCEPT IS USED THROUGHOUT THE ENTIRE SOUND SYSTEM FOR FLEXIBILITY.

THE EXTRAORDINARY FMEGF INTERCHANGEABLE TRANSISTOR MODULE WAS DESIGNED FOR WORLD WIDE COMMUNICATIONS. IT IS USED IN ALL FMEGF RECORDERS, MIXERS, REPRODUCERS AND AMPLIFIERS. THESE COMPONENTS ARE AVAILABLE FOR THE STANDARDIZATION OF THE COMPLETE STUDIO SOUND SYSTEM. MANY STUDIOS HAVE REFITTED THEIR RECORDER AND REPRODUCER TRANSPORTS WITH FMEGF LOW IMPEDANCE HEADS AND MODULE AMPLIFIER COMPONENTS.

THE MODERN DEVELOPMENTS FROM FMEGF RESEARCH, PLUS PRODUCTION KNOW-HOW MAKES IT POSSIBLE TO SUPPLY THE MOST-UP-TO-DATE QUALITY EQUIPMENT AT SENSIBLE PRICES.

THE FMEGF **WARRANTY** EXTENDS TO THE DEALER AND THE CUSTOMER, WITH AIR MAIL PARTS SERVICE TO FREE COUNTRIES ALL OVER THE WORLD.

MADE IN U. S. A.



QUALITY



RELIABILITY



SERVICE

"standard"

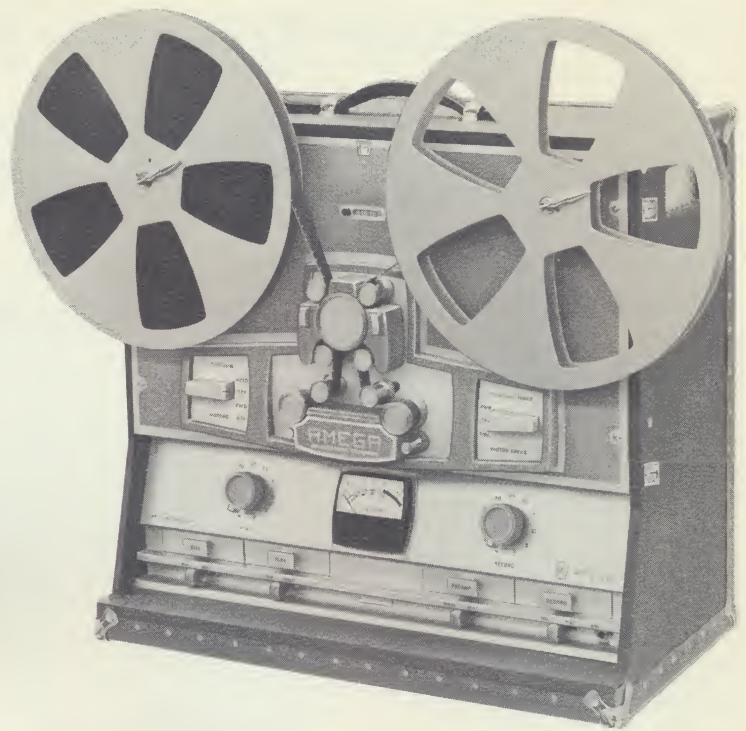
AMEGA A-1

A complete record/play system self-contained in one portable carrying case. Unit has microphone input, film direct monitor through head phones.

Plug in modules include bias oscillator amplifier, record amplifier, microphone preamplifier and play-back preamplifier with gain control.

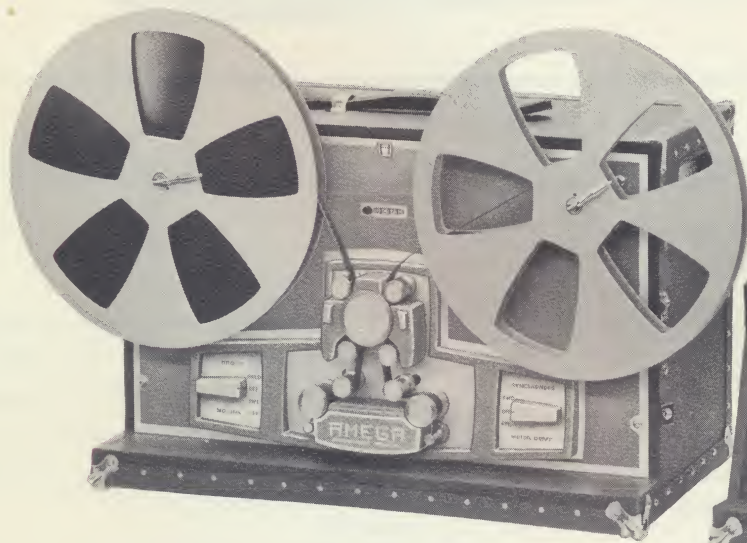
Two torque motors with electric differential for take up and hold back. Unit rewinds film tightly in either direction.

Mechanical unit panel, 10 $\frac{3}{4}$ " x 19".
Amplifier panel, 5 $\frac{1}{4}$ " x 19".



New "space age" design reflects itself throughout the entire A-1 and A-2 standard sound systems. Instrumentation type reels are 1200' capacity and are supplied with each recording system. Reels are split-apart type for ease in loading and unloading. Units are available for 50 or 60 cycles, 110 or 220 volts single-phase, and 220 volts three-phase.

AMEGA A-2



Model A-2 is identical to Model A-1 both electrically and mechanically.

Plug in modules are bias oscillator amplifier, record amplifier, microphone preamplifier and playback preamplifier with gain control.

Model A-2 has standard mechanism with record/play amplifier in separate case. Two-case model has utility for both studio and portable use.

AMEGA M-2

"heavy duty"

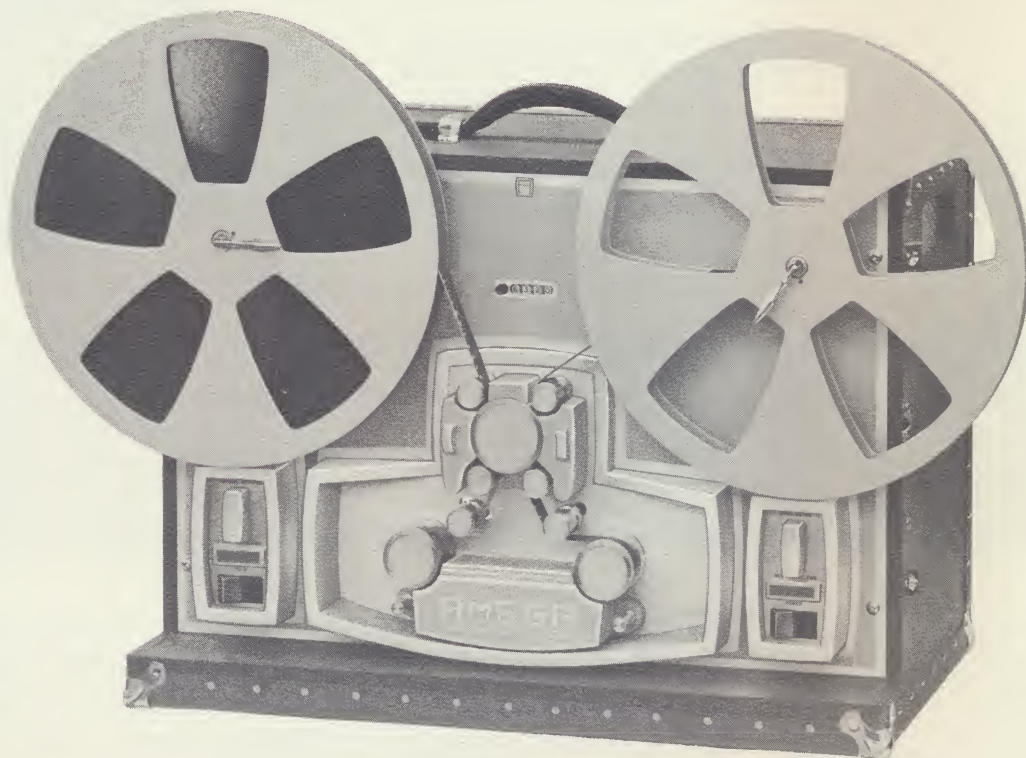
STUDIO-PORTABLE RECORDING SYSTEM

. . . designed to include all the latest features and technology now employed in the space industry. A complete recording system for portable or studio use.

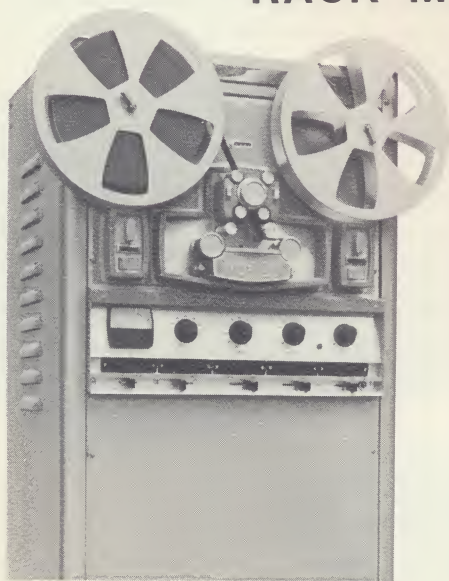
Instrumentation type split-apart reels are for ease in loading film. Two 1200' capacity reels are furnished with M-2 Recorder.

Two torque motors for take-up and rewind have electrical differential in torque for hold-back and take-up. Film is wound tight in either direction.

New ball bearing dampening system holds flutter and wow to less than .15% for 16mm and 0.1% for 35mm.



RACK MOUNT "heavy duty" STUDIO RECORDER



The M-2 studio recorder shown with two channel record reproduce amplifier unit can be ordered with zero in zero out audio. See amplifier catalog for details. As the nomenclature suggests, the M-2 studio model is for "heavy duty" requirements. For around the clock operation such as the service studio, a remote control is available which can be located at the mixer or console.

Model M-2-R complete with rack, sync motor, two torque motors and power supply. Two channel record reproduce amplifier with speaker output.

M-2

RECORDING AMPLIFIER MIXER

... has two microphone input channels with master gain control. Solid state transistorized amplifiers, bridging inputs for high level signals, output 600 ohms, 0 level. Head phones for monitoring direct or film signals. Transistorized power amplifier for speaker monitor and output.

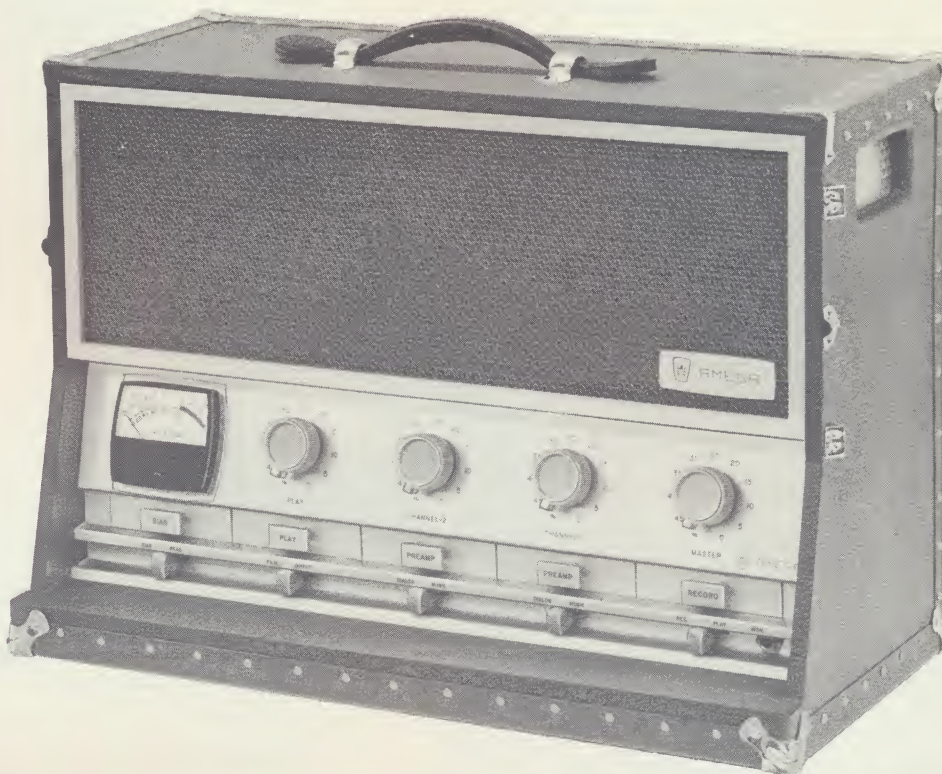
V-U meter reads Bias for Record Oscillator.

Amplifier bias oscillator,
Record amplifier,
Play-back pre-amplifier and
Microphone pre-amplifiers
plug in the front panel.

Dialogue equalization
for each input channel.

All plug in modules
for recorder, mixers
and re-recorders
are interchangeable.

Plug-in amplifiers have special
aluminum enclosure;
transistors are exposed
for ventilation. Circuit board
is in groove and can
be removed if necessary.



SPECIFICATIONS

Film type: 16mm, 17½mm and 35mm.

Tracking: Edge or center track for 16mm.
Standard tracking for 17½mm and 35mm.
Other tracking and heads available.

Drive: Salient pole synchronous motor.
Standard unit 110 volts, 60-cycle, single-phase.
Available at no extra cost: 50-cycle, single-phase.
220 volts, single-phase, 50 or 60-cycle.
220 volts three-phase, 50 or 60-cycle.

Take-up/Rewind: Two torque motors with electrical differential for tight wind in either direction.

Frequency Response: 45 cps to 10000 cps, ± 2 db.

Distortion: Less than .1% total harmonic from film. Recording 10 db below film saturation.

Signal-to-Noise Ratio: Better than 58 db at .1% distortion.

Flutter-to-Wow: 0.15% maximum RMS overall.
.01% maximum RMS overall for 35mm.

Inputs: Two microphones, 50 or 250 ohms.
Two bridge inputs, 600 ohms.

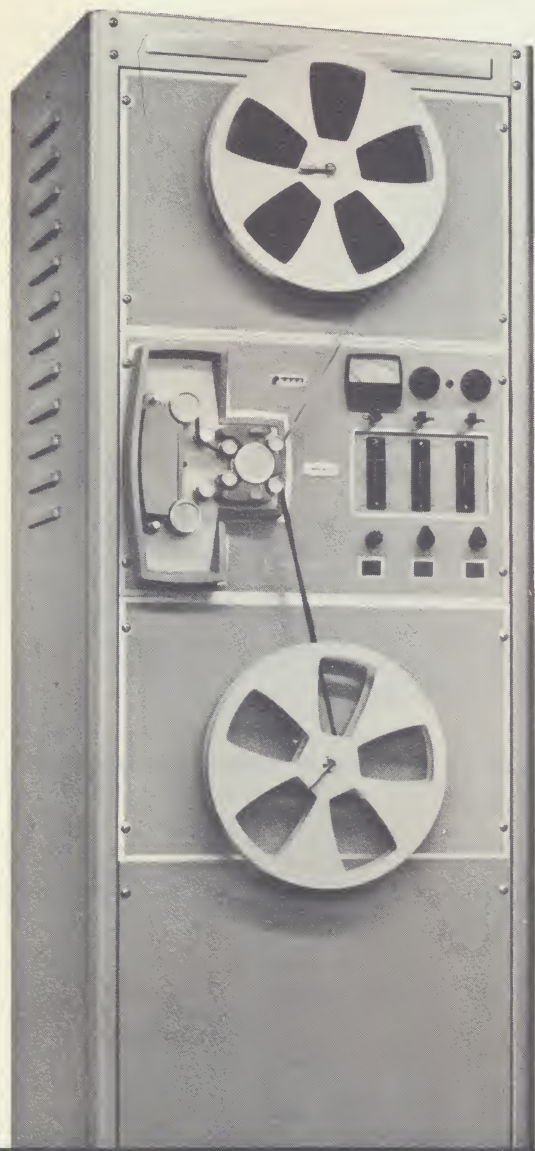
Output: 600 ohms, 0 level. Speaker output, 2 watts.

Monitor: Film-direct switching for headphones.



AMEGA M-5

"studio" recording system



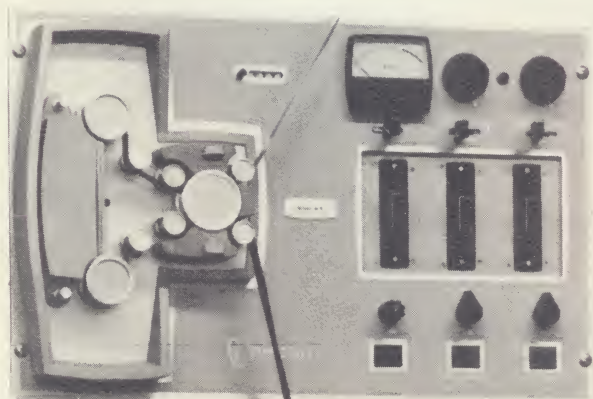
The M-5 Studio Model was designed for 35 MM master recording. In keeping with modern concepts, illumination push button controls are used for various functions. As a master recorder, the system can be remoted to the console with complete control.

The basic design utilized a heavy duty type mechanism with synchronous drive motor and provisions for sync-selsyn or distributor type interlock. The film capacity is 3,000 feet with fast forward fast reverse, differential torque for tight wind of the film in either direction.

The record and play amplifiers are standard Amega interchangeable modules. The input is 600 ohms zero level and the output is 600 ohms zero level.

The bias oscillator is so designed that it has sufficient output power for the Amega erase head feature. The erase head can be ordered with the equipment or be installed at some later date.

As pictured, the unit is complete with rack cabinet, power supply, synchronous motor and two torque motors.



Switching is provided for bias read, film direct, record play, start stop, fast forward fast reverse. The film direct function can be remoted to the console as well as the record-play, stop-start modes.

AMEGA M-3 and M-4

PORTABLE 16mm synchronous magnetic

FILM RECORDER



Two models are available. The M-3 Portable with nickel cadmium rechargeable batteries adequate for two hours of continuous field recording.

The M-4 is supplied for 110 volts 50 or 60 cycle operations for use where the mains power is always available. The functions are identical.

Actual photographs and additional specifications upon request.

- Standard 16mm 400 ft. reels of magnetic film for ten minutes of continuous operation. Split-apart self-contained reel assemblies permit ease of loading.
- Salient pole synchronous motor is gear coupled to the sprocket drive. Absolute sync is achieved from camera 60 cycle pulse signal. The 60 cycle pulse signal from the camera, amplified through the inverter, controls the speed of the synchronous motor. Built-in 60 cycle frequency generator permits using recorder for synchronous sound with no external source of power or frequency regulation.
- All metal case provides rugged enclosure for mechanism and amplifier.
- Standard switching and controls include record gain control, playback gain control, direct monitor control, separate film-direct, record, playback, sync forward, external-internal 60 cycle control and battery test switches for amplifier power supply and inverter power supply. Separate forward, reverse switch for rewind, internal/external AC power switch and music/dialogue switches are also provided.
- Two torque motors are used for take-up and rewind.
- The Amega M-3 is ideal for field use with any camera which has a 60 cycle output generator, or with camera driven by synchronous motors. Absolute lip-sync is achieved.
- Recording directly on 16mm magnetic film eliminates the transfer process which is necessary when using 1/4" tape. The result means savings in dollars and time.
- All SMPTE and industry standards are maintained with the use of 16mm magnetic film. Playback is immediate, and the editing process is greatly simplified.
- The nickel cadmium battery power pack is removable and rechargeable. Spare power pack enables the operator to have one set of batteries charging while the other set is in use.
- Audio circuitry and components are equal to the Amega studio recorders. Miniaturization has meant no compromise in quality or specifications. The use of plug-in modules permits the operator to maintain the equipment to a large degree.
- All controls are designed and placed for maximum convenience of operation. The M-3 will operate in either a horizontal or vertical position, under a wide variety of environmental extremes.



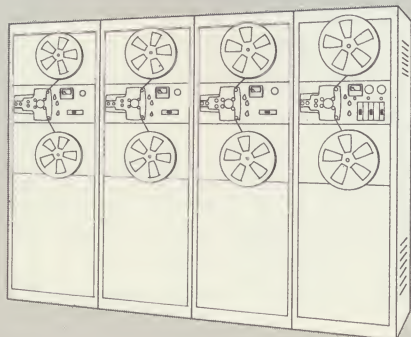
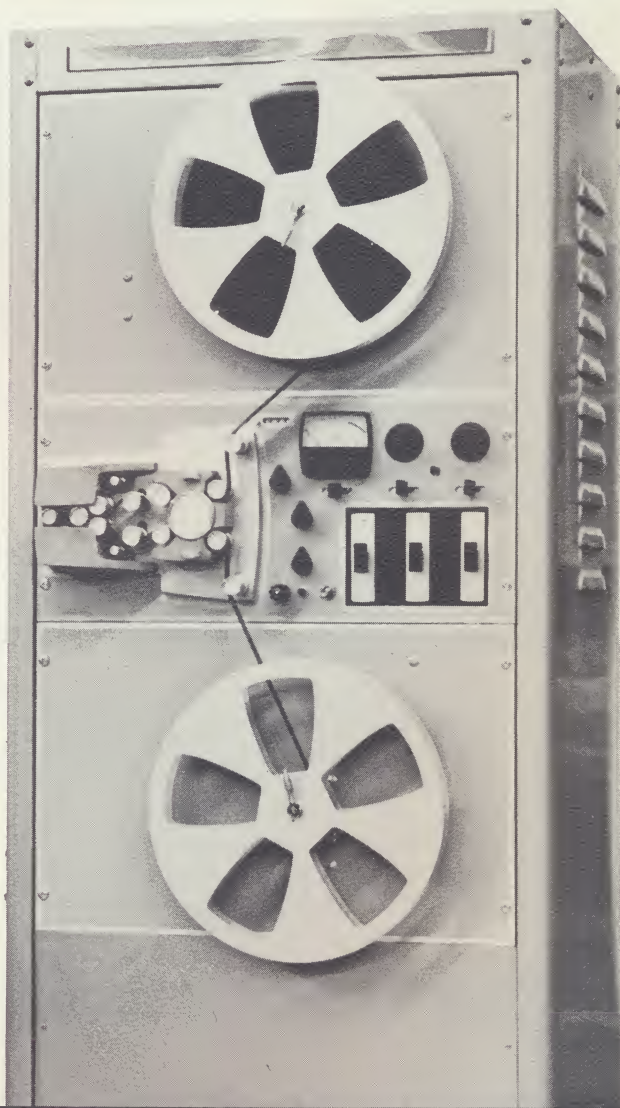
AMEGA M-6 "mono" system

COMBINATION 16-35 mm 16-17½ mm 17½-35 mm

The Amega M-6 "Mono" system was designed for the service studio dealing in 16, 17½ and 35 MM sound requirements. This system has the new instrumentation type drive developed by Amega for the computer and automation industry. It will take film splices with minimum distortion and sets new standards for minimum wow and flutter plus maximum head contact.

The film capacity is 3,000 feet with differential torque motors. Film can be tight wound in either direction. All controls are provided on the main panel including the audio functions. The Amega interchangeable module is used for recording and play-back. FILM DIRECT and RECORD PLAY switching functions are included. The bias oscillator is plug-in type with switching for bias read on the VU meter. A four digit push button reset type footage counter with sprocket drive is included.

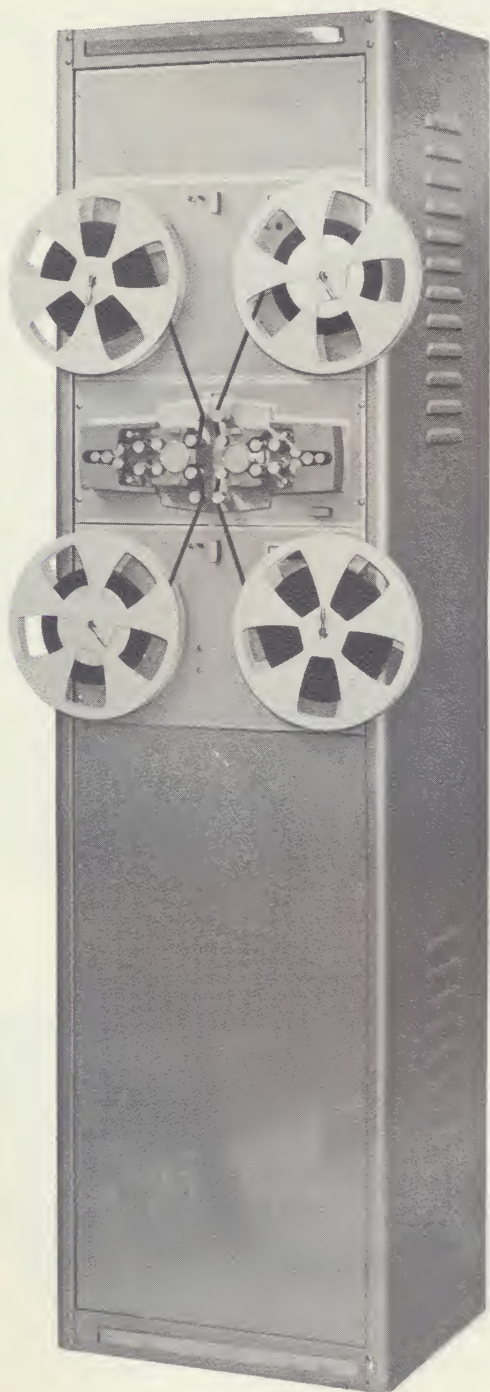
The unit as pictured is supplied with a 77" rack cabinet providing a convenient threading height. The power supply synchronous motor and two torque motors are also included.



The mounting of the take-up supply reels above and below the mechanism permits several racks to be installed directly adjacent to each other. For the studio where space is not a critical problem, the M-6 configuration permits several operators to load and unload simultaneously or to operate each of the several units individually for monitoring or rerecording sessions. All Amega recorders are provided with motor output shafts for the direct coupling of interlock motors. See accessory catalog for details. Actual photographs and additional specifications will be sent upon request.

COMBINATION

16—35 MM



The M-7 "Duo" System provides the operator with the convenience of direct transfer from 16 MM to 35 MM, 17½ MM to 35 MM or 17½ 45 feet per minute to 35 MM or 16 MM. One recording amplifier with provision for switching equalization from 36 feet per minute or 90 feet per minute can be utilized for the combination system. For transfer, one additional Amega plug-in playback module completes the system.

All switching functions are conveniently located. Film capacity is 2,000 feet with differential torque motors for each mechanism. (See Amplifier catalog for different types to fit your requirements).

The "Duo" Two unit drive can be mechanically interlocked at no extra cost. Individual motors for 36 feet or 90 feet are provided. Secondary speeds are accomplished through switching provided on the front panel.

AMEGA M-7

"duo" system

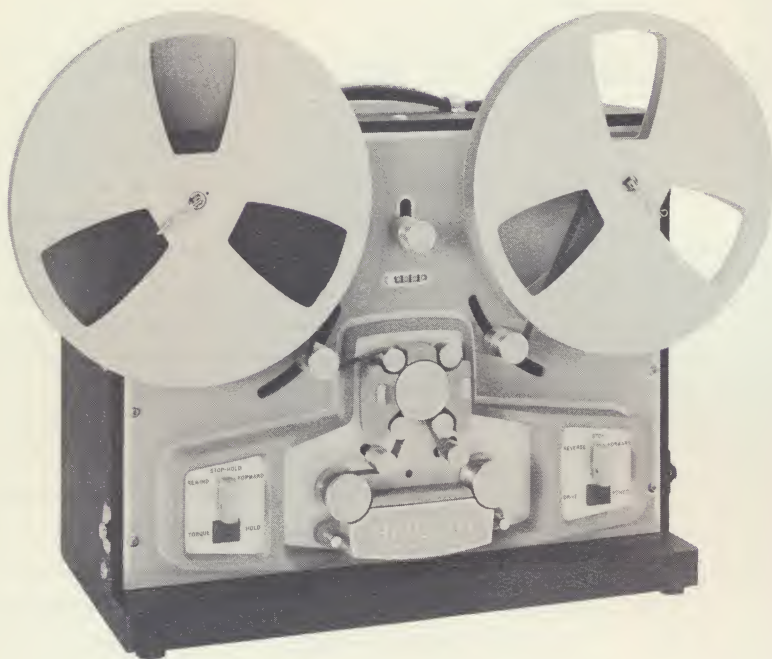


Four combination units can be mounted in a single 77" rack cabinet. The zero in zero out record reproduce amplifier is located in the center of the rack.



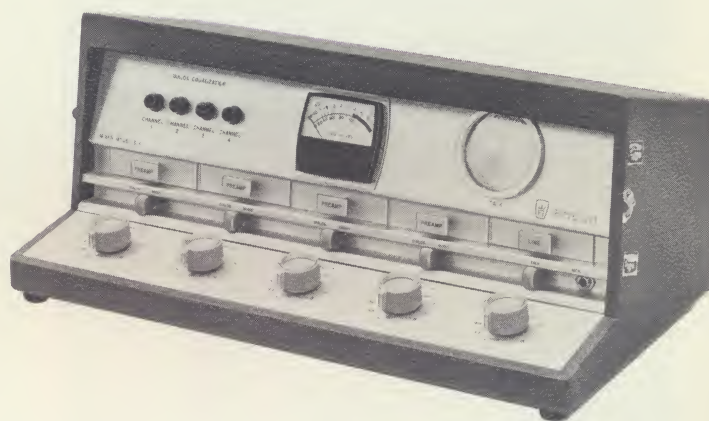
When racks are to be mounted directly adjacent to each other, reels can be arranged with no overlap. Film capacity 2,000 feet.

The AMEGA M-1



Revolutionary new ideas are included in the Amega M-1 Automatic System. A new type direct drive motor has been developed by Amega which requires no gearing and has constant stop start characteristics. For combination portable studio applications, the unit is supplied with a new version of the Amega E-1 Four Channel Mixer. The record play amplifier and bias oscillator are installed with the mechanical transport. The FILM DIRECT, RECORD PLAY functions are remoted to the mixer.

An erase head is included as an integral part of the head assembly and the plug-in oscillator provides the bias and erase current. Every detail in the system has been superbly designed to provide the operator with a finger tip control of all functions and the versatility necessary for any type recording situation.



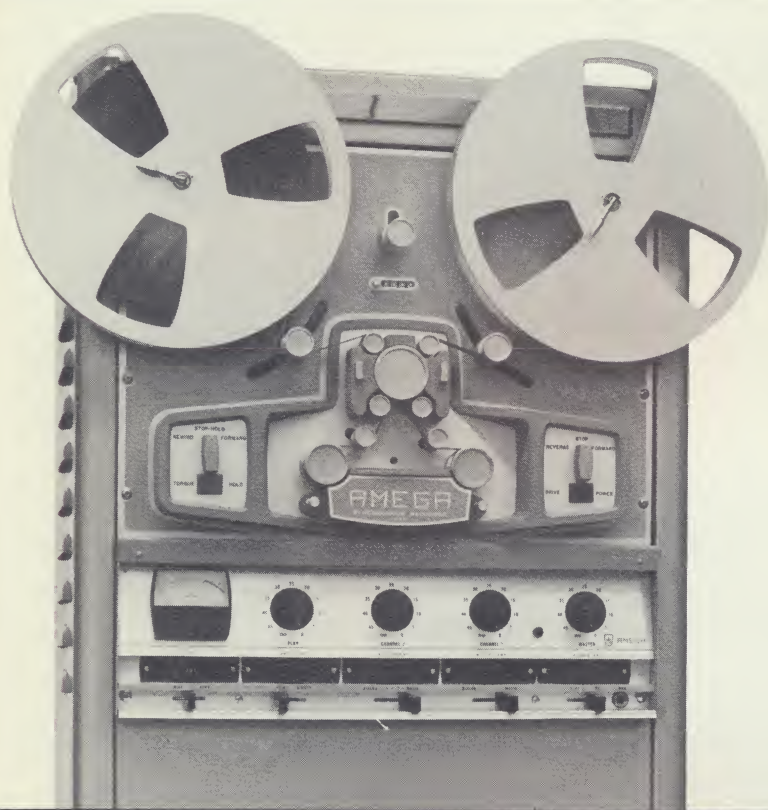
The convenience of remote mixing means that the transport can be located several hundred feet from the scene of recording. The recorder mechanism is also controlled at the mixer in the FORWARD and REVERSE modes.

SEND FOR ACTUAL PHOTOGRAPHS AND ADDITIONAL DATA

Built in
ERASE - CONSOLE CONTROL

REMOTE
CONTROL

"AUTOMATIC"



As a studio recorder, the M-1 is the ultimate for transfer and "mastering". When using the M-1 reproducers, the good takes from a day's shooting can be automatically and quickly transferred for the film editing department. The assembly of the dialogue tracks, for example, can be accomplished without splicing to achieve the continuity and time lapse from scene to scene. This function can be achieved by remote control at the mixing console.

The unit pictured above has a two channel input amplifier for dual track recording and can be utilized for local and foreign dialogue applications. A two channel head is available for 16, 17½ and 35 MM.

This two channel concept eliminates the need for looping since the recorder will rapidly reverse itself through the sprocket for playback of dialogue for any given scene. Since an erase head is incorporated, the scene can be repeated until perfection is achieved. The result is a continuous sound track ready for the scene to scene transfer process. From the console vantage point while viewing the picture, the operator can selectively sync the dialogue for each scene and simultaneously transfer to the master recorder.

The instant STOP START, FORWARD REVERSE features lend themselves to many other studio requirements. Dialogue, music and sound effect can be quickly shifted and rerecorded to match individual scene requirements.

Amega has eliminated the pops, clicks, etc. which were some of the original objections to erase within the recorder.

See the Amega amplifier catalog for different types and combinations available and applicable to your input output requirements. Actual photographs and additional specifications sent upon request.

INSTANT START-STOP

FAST FWD.-REV.
THRU SPROCKET

PLEASE SEND ADDITIONAL INFORMATION

ON AMEGA RECORDING SYSTEMS

A-1 "Standard" _____
A-2 "Standard" _____
M-1 "Automatic" _____
M-2 "Heavy Duty" _____
M-3 Portable "DC" _____
M-4 Portable "AC" _____
M-5 "Studio" _____
M-6 "mono" _____
M-6 "mono" combination _____
M-7 "duo" _____
M-7 "duo" combination _____

Dubber reproducers _____
Interlock Equipment _____
Mixers _____
Consoles _____
Components _____
Equalizers _____
Transolvers _____
1/4" Tape _____
Amplifiers _____
Heads _____
Microphones _____

TO: _____



AMEGA

The most progressive name in Motion Picture Sound

Manufacturers of Motion Picture Sound Devices

AN AFFILIATE OF OMEGA ENGINEERING COMPANY

11817 WICKS STREET / SUN VALLEY, CALIFORNIA

WARRANTY:

All Amega components are tested before and after assembly. The complete recorder is tested to meet industry standards. All parts have a one year guarantee. Defective transistor boards for bias oscillator, record amplifier, play amplifier and microphone pre-amplifier will be replaced as complete boards by your dealer or the factory.

Defective mechanical and electronics components will be replaced on exchange basis. Replacement parts will be shipped air mail without charge to the customer to any part of the world. Record and play heads are guaranteed except for normal wear. No claims under the guarantee will be entertained if parts have been misused or abused.



AMEGA

INTERNATIONAL

PRESENTS the "EDIT-SYNC"
SEQUENTIAL SOUND EDITING AND DUBBING SYSTEM

REPRINT FROM EQUIPMENT PAPERS SECTION

OF THE

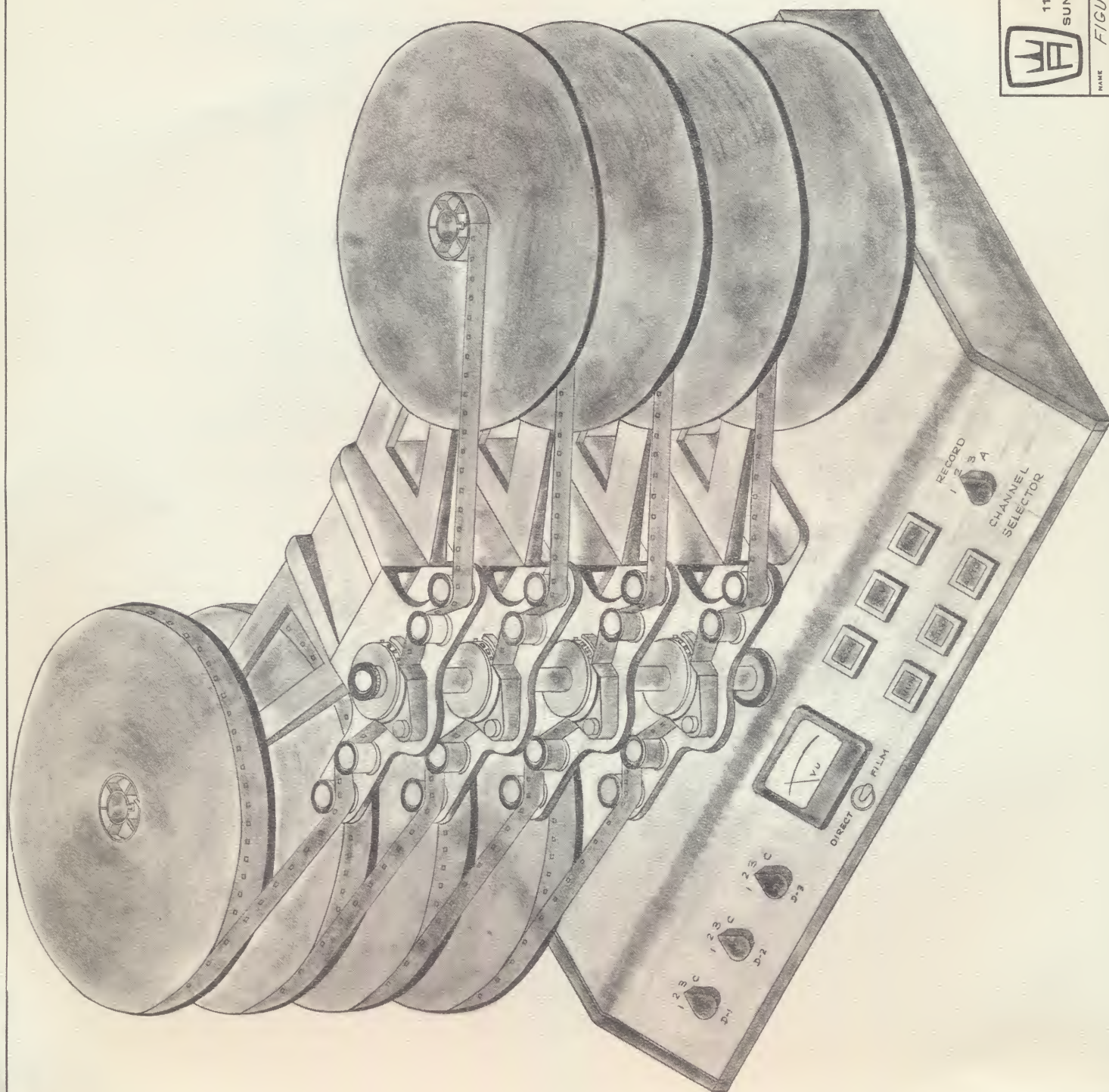
SOCIETY OF MOTION PICTURE AND TELEVISION ENGINEERS

104th Technical Conference and Equipment Exhibit

Washington D.C. Nov. 13, 1968

Market research EARL W. HARRIS

Industrial design concept WILLIAM H. STUTZ



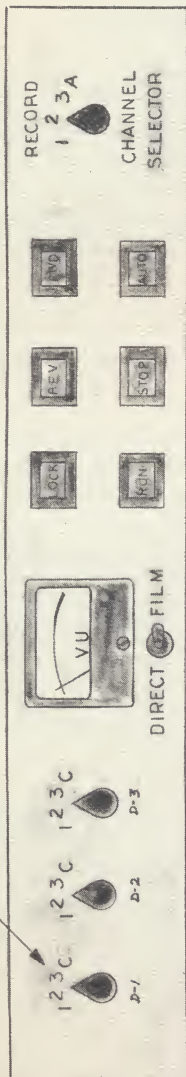
 AMEGA 11817 WICKS STREET SUN VALLEY, CALIFORNIA		DRWN. CHD. <i>Stuf</i> SCALE MODEL NO. PART NO. X 32	DATE DATE DATE DATE DATE
NAME		FIGURE NO. 1	

FIGURE NO. 1 - MASTER RECORDER AND THREE REPRODUCERS

"EDIT-SYNC" OPERATIONAL FEATURES

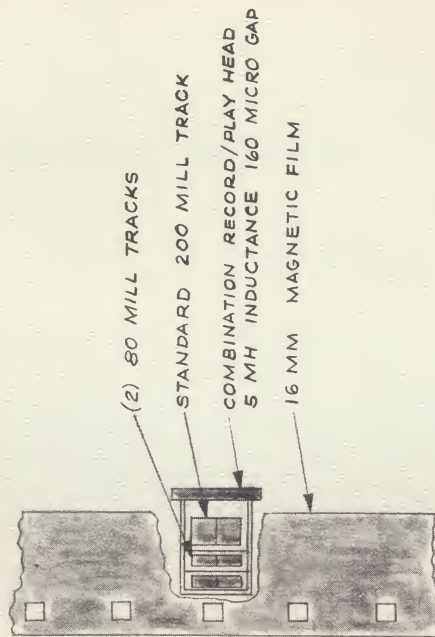
1. System designed for use within the functions of sound editing for sequential assembly of dialogue, music and effects and to operate as the basic equipment for the dubbing process.
2. Unit features one - three-channel recorder with erase, record and reproduce. Each channel is selective or all three channels can be recorded or reproduced simultaneously. The erase head function is also selective, all three channels or combined simultaneous erase.
3. Three reproducers are also a part of the basic assembly, each having a three-channel reproduce head with matching characteristics to the recorder record reproduce heads. Reproduction is selective, all three channels.
4. The complete audio system is low impedance, including low inductance heads. The amplifiers are modular and interchangeable between record and reproduce.
5. System features interlock of the recorder and reproducers with editing table picture head. Fast forward and fast reverse or "sync speed" are controllable from the editing table or from the edit-sync console.
6. Sequential transfer of music, dialogue and effects is accomplished during the editing of the picture. Splicing of the different sound tracks is unnecessary.
7. During the sequential sound editing process, the transfer of program material is push-button control and automatic for each scene or sequence. The roll of recorded sound comes out equal, frame per frame, to the picture without splices, clicks, or pops, and each roll is ready for reproduction during the dubbing and mixing process.
8. The three-channel capability enables the operator to overlay effects and music in sync for each scene.
9. The "edit-sync" drive mechanism is the ultimate in threading.
NOTE: The top reproducer (#1) can be mechanically decoupled and the sprocket rotated for matching sync to the picture.
10. Transport utilizes Amega "direct drive," synchronous motor system, with the recorder and three reproducers driven from a common dampened drive shaft. Flutter values exceed most conventional transports, and with consistent performance. The heads are mounted directly in the drive sprocket assembly, providing the ultimate in "gap" contact and eliminating the "film skew" characteristics often evident in several drive systems.
11. Mobility of the "edit-sync" unit enables the operator to have finger-tip control during editing and dubbing. The horizontal configuration eliminates the need for reels and additional personnel to load and unload as customary with conventional equipment.

REPRODUCE CHANNEL 1-2-3
OR MIX ALL THREE



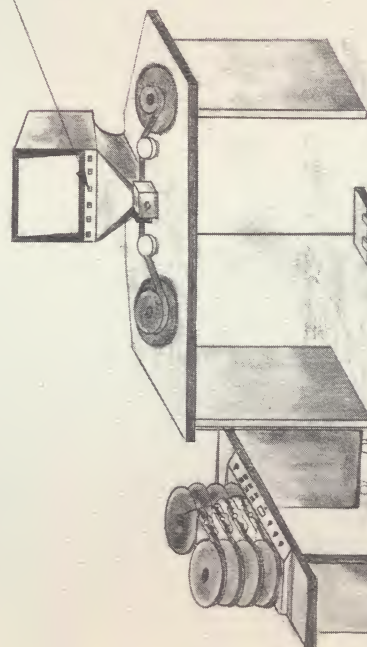
EDIT-SYNC II
CONTROL PANEL

RECORD/REPRODUCE
HEAD DESIGN



ELECTRONIC FOOTAGE-
FRAME COUNTER

[PICTURE EDITING TABLE]
FAST FORWARD - REVERSE OR
"SYNC SPEED" SOUND
LOCKED WITH PICTURE



EDIT-SYNC II
MOBILE CART
SOUND EDITOR
RECORDER-DUBBER

- NOTES: 1. RECORDER THREE CHANNEL RECORD REPRODUCE
2. (3) REPRODUCERS THREE CHANNEL. PLAY ANY
OF THREE CHANNELS OR MIX ALL THREE
3. ERASE ANY OF THREE CHANNELS OR ALL
CHANNELS.
4. RECORD ONE, TWO OR ALL THREE CHANNELS DURING MIX

DATE	8/88
CHG. NO.	888
SCALE	
MODEL NO.	EDIT-SYNC
PART NO.	X33

AMEGA
11817 WICKS STREET
SUN VALLEY, CALIFORNIA

NAME: FIGURE NO. 2

FIGURE NO. 2 - EDIT-SYNC SYSTEM

Figure #2 shows the editing table with picture head and sufficient space for script splicer, etc. Adjacent is seen the Edit-Sync unit which is electrically interlocked to the picture head sprockets for fast forward/reverse or "sync speed." Editing the work print is done on the horizontal table and splices can be made as the numerous scenes are selected. Sync dialogue or sync effects can be simultaneously sequentially edited and transferred with each scene of the picture.

1. Dialogue is selected according to the scene and placed on the upper reproducer deck of the Edit-Sync transport.

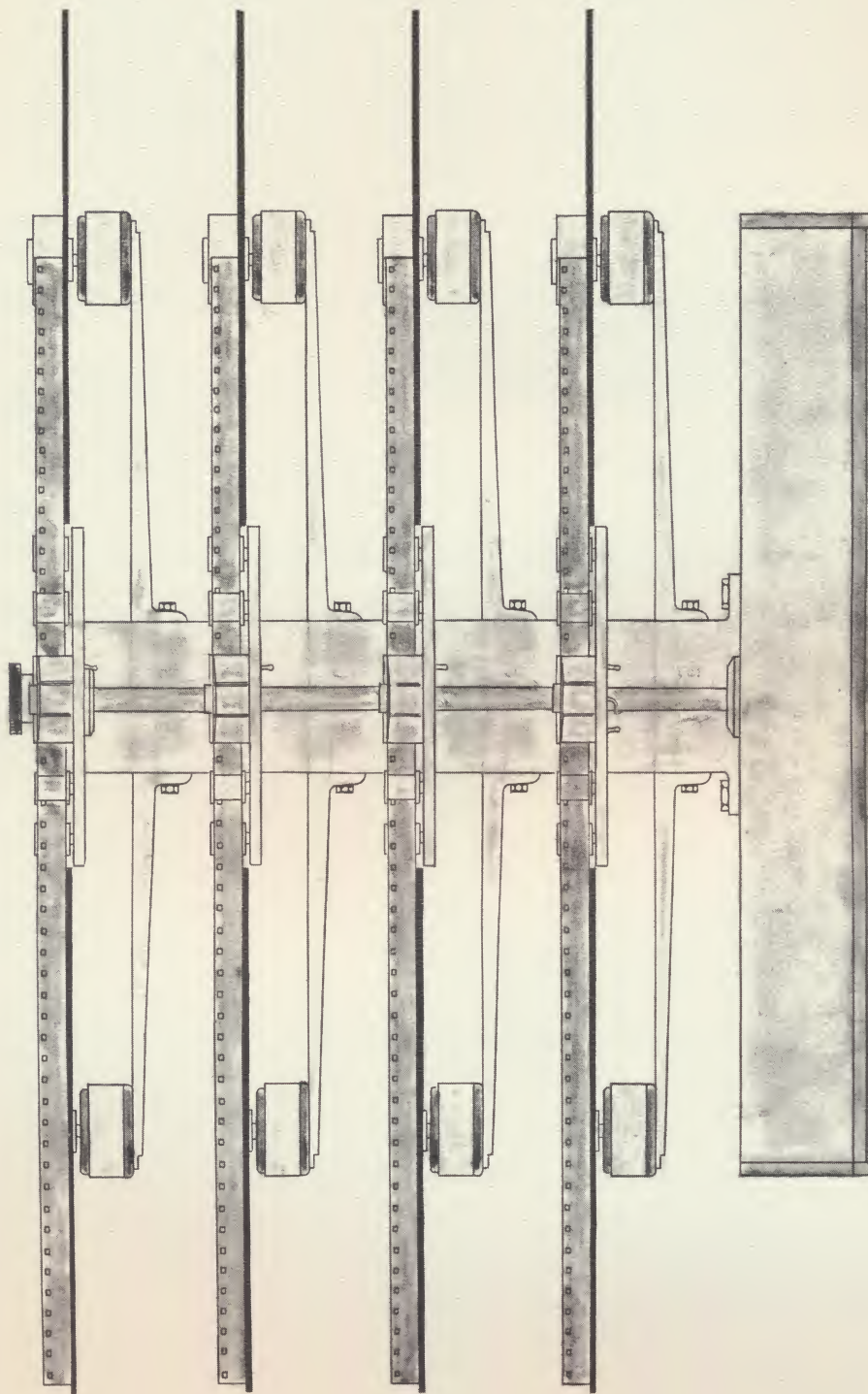
NOTE: The sprocket of Number 1 reproducer can be disengaged and rotated until sync is achieved to the picture.

2. The master recorder is threaded with a non-splice roll of 16 mm. magnetic film.
3. When the sound and picture are in sync, they are brought forward to the start mark and the automatic process begins.
4. The recorder and reproducer follow in interlock with the drive of the picture head.
5. The editor transfers each scene sequentially as sync sound may be desirable.
6. The master roll of sync-sound will correspond in length to the edited picture. No "pops" or "clicks" from stopping or starting will have been recorded.

To follow the practices employed in major studios, it is sometimes necessary to provide an overlay of several sync effects. This feature is gained by employing a three track, three channel record and reproduce system. Each of the three reproducers is equipped with a three channel reproduce head. Figure No. 3 shows the head track replacement with respect to the 16 mm. film. In order to maintain industry standards and to accommodate final transfer to optical Channel No. 1 is a standard 200 mil track. Channels 2 and 3 are 80 mils with ample shielding to provide separation between the three tracks.

The use of three channels in the editing process not only provides an overlay of simultaneous effects, but is also desirable for foreign dialogue, narrations, and for selecting background music. For example, any variation of music from scene to scene suggests that it may fade from one scene to the other. The same selection can be recorded on both Channel 1 and Channel 2 slightly displaced providing the operator selectivity so as to start and end on a beat.

The "edit-sync" system encompasses many new concepts and technical advantages. Additionally, it provides the producer with greater flexibility and opportunity to be more creative and provide greater impact to each audio-visual presentation.



 AMEGA 11817 WICKS STREET SUN VALLEY, CALIFORNIA	DRAWN CRED. <i>Shif</i>	DATE 8.8.8
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	NAME <i>FIGURE NO 3</i>	

FIGURE NO. 3 - TRANSPORT FRONT VIEW

AMEGA INTERNATIONAL

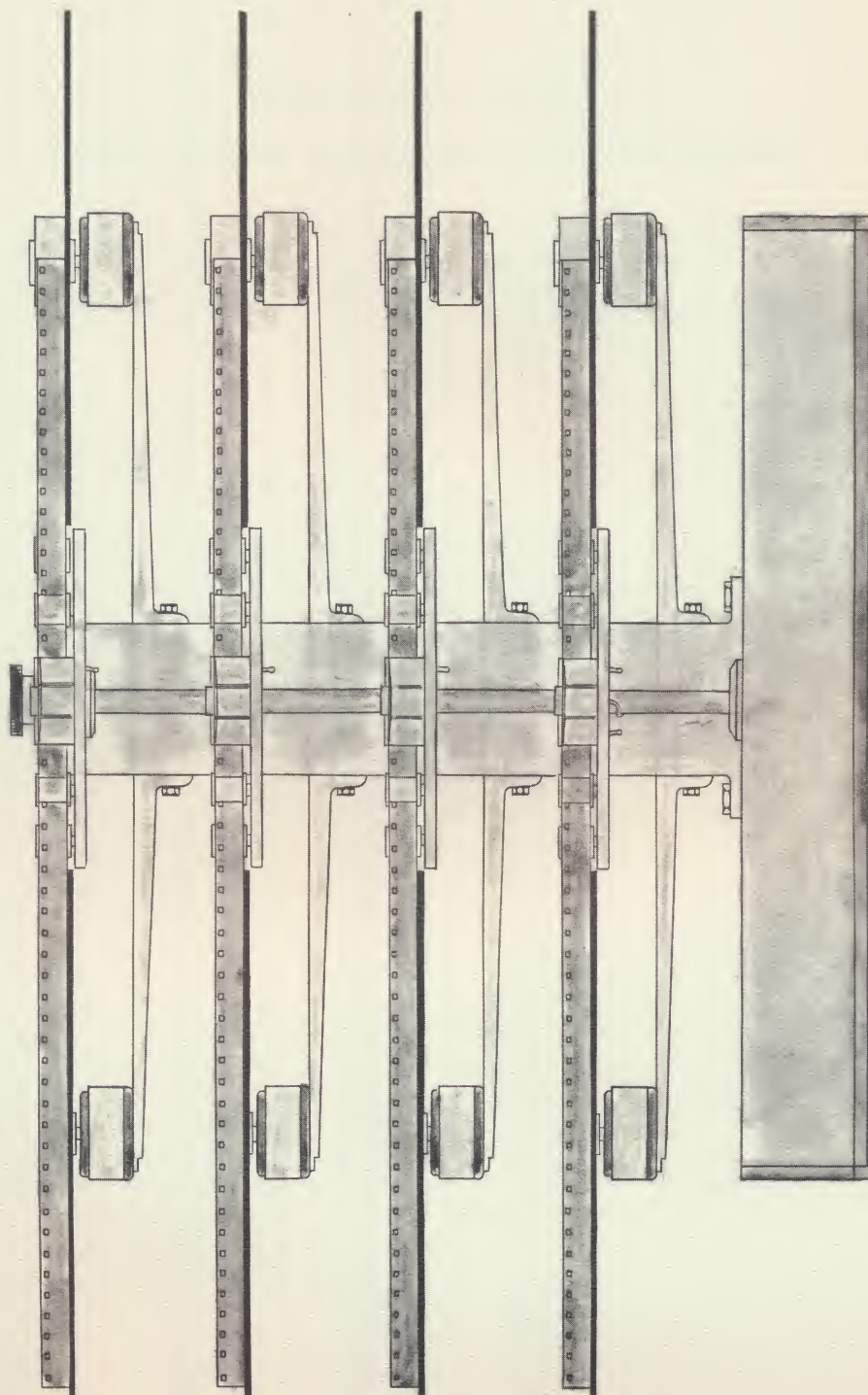
SEQUENTIAL SOUND EDITING AND DUBBING SYSTEM

The Audio/Visual Industry, in the last few years, has grown more rapidly than expected. Understandably there are certain areas where technology and equipment have not advanced proportionately. One such area is editing.

The editor, with respect to sound, has been the forgotten man. Little if any innovation has come forward within the last 25 years. Some attempts have been made to provide equipment that would ultimately save time; however, these efforts have often met with resistance, especially from professional "old-school" personnel. Time-saving alone has not provided the base necessary for the equipment designer and manufacturer to make any appreciable changes.

Amega International, through its world-wide activities, has made a study of both the techniques and equipment presently used in the field of education, industry, and commerce in general. Looking at the sophisticated medium of television, our audiences, both young and old, have been spoiled with the fast-moving, high-impact presentations. The producers of audio/visual products working with limited budgets are those most in need of equipment which will simplify their process and provide them with comparable final results. Their techniques are such that it has been necessary to improvise editing tables with picture head, synchronizers, rewinds, sound readers, etc.

When we consider the number of splices and the amount of time marking the various sections of dialogue, effects and music, it is logical that any design of new equipment should include some facility for improving technique and simplifying the process. The Amega Edit-Sync System is designed to encompass all the equipment necessary to facilitate the sound editing process as well as sound dubbing. Figure 1 illustrates the new concept in dubber recorder design. The lower unit is the master recorder, which includes such features as forward/reverse for "pick up" during a dubbing session, non-discernable erase, the elimination of pops and clicks from erase record to reproduce, and the incorporation of the Amega "PIC" system.



DRWN.	DATE
CHNG.	DATE
SCALE	MODEL NO.
NAME	
FIGURE NO. 3	

AMEGA
11817 WICKS STREET
SUN VALLEY, CALIFORNIA

PART NO. X 34



AMEGA

"PICK-UP" RECORDER

The Amega Model PIC Combination 16/35 mm "Pick-Up" Recorder was designed to meet the modern-day concepts of dubbing and re-recording. Three models are available: 16 mm single or multi-channel; 35 mm single or multi-channel; combination 16/35 mm. The multi-channel feature permits the separation of music, dialogue and effects during the dubbing or re-recording process.

The term "Pick-Up" Recorder means that the master recorder can be stopped and started at any time during the sequence of the dubbing process. Insertions and deletions can be made as might be necessary for the final composite perfection. In practice, the master recorder and the reproducers are interlocked with the projector.

Included in the system is a master control panel which permits the operator to selectively erase, record, and reproduce in absolute sync with the picture. A combination record/reproduce head facilitates this sync replay feature. For example, each scene of the picture can be dubbed and perfected in sequence with the edited picture. The master panel also contains the stop, start, and reverse switches for absolute interlock with the master recorder, reproducers, and projector. There are no clicks or pops recorded or audible in the stop, start, or reverse process. Additionally, the injection of erase or the record bias is non-discernible in the "Pick-Up" process.

In addition to this new technique of dubbing, transfer and re-recording the Amega PIC unit can be used for post sync and instantaneous sync operation. Prior to the PIC innovation, most foreign films were dubbed and the post sync recording done using a loop scene from the picture and a magnetic loop of equal length in the recorder. The director would switch from record to playback to check the sync and perfection of each scene. Later, the editor would splice the various scenes together along with the sound track for the final composite process. Considerable time was involved with this technique due to the fact that pops and clicks had to be eliminated from the sound loops and each scene had to be in sync to say nothing of the numerous splices contained in each 1000 foot reel of picture and sound.

The contemporary technique in the dubbing and recording of sync material is to start out with a complete reel of magnetic film equal to that of the picture and use the "Pick-Up" or back up technique. Each scene, then, when perfected is in "sync" with the picture with no pops or clicks and no splicing is necessary for picture or sound to complete the final composite.

The technique as described above can be achieved using a single channel master recorder; however, the three channel process has become very popular due to the separation of dialogue, music, and effects. Errors

may be corrected during the first pass. It is quite simple with the "Pick-Up" unit to reverse and re-record in absolute sync any sequence of any of the three sound tracks which may need correction or final perfection. Significant to this technique is the ability to balance the levels between music, dialogue and effects.

Four additional features are contained in the Amega PIC System

1. An Interlock Footage Counter is self-contained in the control panel. This four digit unit is illuminated and well-placed for the utility of the operator. On the combination 16/35 mm unit, two counters are self-contained providing the possibility that a picture may be dubbed using both 16 and 35 mm sound tracks; therefore, the operator can cue in the absolute footage for both mediums.
2. Amega has pioneered a technique which simplifies insertions and deletions from a pre-recorded track. There is no extra cost to this feature since it depends only on the placement of the reproduce head. The insertion of a single word is possible with a little practice on the part of the operator. For example, with the reproduce head placed ahead of the erase and record head, the operator listens to the beginning of the sequence to be deleted and at the point where he hears the first word, he pushes the record/erase switch and the portion to be deleted begins; likewise, when he hears the end of the sequence he releases the record control. It is possible to delete old material and record new material simultaneously. This can be done from either a microphone or from a sync sequence from one of the reproducers. Playback is then accomplished from the combination record/play head which places the recorded sequence in absolute sync with the picture. The use of the normal play head in the normal position would be rarely used since it would not be in sync with the picture. Depending on the techniques of the particular studio, placement of the reproduce head is optional.
3. The control panel can be tailored to fit your console or packaged in an arm chair or desk top configuration. It may be used directly adjacent to your mixing board or in any part of the studio. Amega manufactures several different type mixers as well as desk type and floor type consoles.
4. All PIC units are supplied complete with an Amega sync motor and selsyn interlock motor. Interlock attachments are available for almost any type of projector. Please write for prices and details. Give complete model description of your projector.

Perhaps the greatest significance to the "Pick-Up" technique is not contained in the new features within the machine but in the fact that considerable time is saved and that one operator/mixer can control the entire dubbing process.

AMEGA "PICK-UP" RECORDER
 "POST-SYNC" AND "INSTANTANEOUS SYNC"
 RECORDING
 FORWARD REVERSE OPERATION

M-5PIA The model M-1PI was designed for major studio application requiring complete versatility, including remote control of the special erase head, and the combination record-reproduce head. Interlock forward and reverse with projector. Absolute sync picture for precise insertion of dialogue, music or effects. Erase on-off is non-discernible. Single words can be deleted and new words inserted without pops, clicks or bias noise. For either post sync or foreign dialogue conversion unit is equipped for forward reverse operation and for "looping". "Director remote control" has forward reverse control switch, record to play in sync switch. Erase on-off switch used in record position for either "looping" or forward end to end operation. Normal "record to play" switch automatically controls erase during record mode. Single channel combination record-play head, erase and monitor play head. Amega zero in zero out amplifier with special erase oscillator and power supply. Remote control has interlock footage counter. Combination system has two counters for 16 and 35 mm. Both are interlocked. S-1 interlock motor also included. Combination 16/35 mm has two S-1 motors.

16 MM	\$5375.00
35 MM	\$5575.00

M-5PIA-C	Combination 16/35 MM	\$6675.00
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M-5PIB Same as above 2 channel. Unit has erase control for both channels. Tracks can be erased separately and insertions can be made on either track. Two zero in zero out amplifier systems. All heads are two channel.

16 MM	\$6850.00
35 MM	\$7050.00

M-5PIB-C-2	Combination 16/35 MM	\$8150.00
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M-5PIC-3 Same as above three channel record-erase and play head, three channel three zero in zero out amplifier system.

16 MM	\$8335.00
35 MM	\$8535.00

M-5PIC-C-3	Combination 16/35 MM	\$9635.00
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Four channel, six channel, and eight channel available on 35 mm units. (eight channel equal to standard for 1" tape). Write for details and prices.

PROFESSIONAL USERS PRICE LIST, Effective May 1, 1958
 (Subject to Change Without Notice)

M-5P TYPE REPRODUCERS
Complete with S-1 Interlock Motor

M-5PR-16	16 mm	\$2250.00
M-5PR-135	35 mm	\$2470.00
M-5PRC-1 combination	16/35 mm	\$3130.00

2 CHANNEL

M-5PR-26	16 mm	\$2750.00
M-5PR-235	35 mm	\$2970.00
M-5PRC-2 combination	16/35 mm	\$3970.00

3 CHANNEL

M-5PR-36	16 mm	\$3100.00
M-5PR-335	35 mm	\$3320.00
M-5PRC-3 combination	16/35 mm	\$4520.00